

HEALTH

EDITED BY

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Notes by the Way

"Health is the foundation of all our physical happiness."—Herder.

THOSE who desire full and lucidly-imparted information on the subject of the "Workmen's Dwellings Acts: their Nature, Operation, and Results," will find, in an interesting paper in the *Citizen*, for Nov. 17, the details they require. The writer of the article, Mr. George Howell, is well known for his candid outspokenness on all questions connected with the welfare of the working classes; and we have pleasure in adding, that a series of papers from his pen on "Public Parks and Open Spaces" will shortly be published in *HEALTH*.

* * *

It would seem as though "the Bitter Cry of Outcast London" is being re-echoed in other great centres of the population. The *Liverpool Daily Post* has recently been exposing some of the social horrors of that city in a series of papers entitled "Squalid Liverpool." We fancy some of the details given in these articles outrival anything which can be told of the London poor. Whole streets in the great sea-port seem to be given up to every force and power that make for misery, disease, and crime. There are places of extensive area, which know nothing of pure air, light, or any human agency tending to advance—beyond, it may be, the occasional appearance of the doctor or the priest. A Roman Catholic priest acted as guide to the writer (or writers) of the articles, and conducted him (or them) in safety through districts of which even the police fight shy. This population, living in the depths of misery and degradation, seems chiefly to belong to the Roman Catholic persuasion; and certainly there is no lack of attention to its wants by the priest of that church. It is terrible to read of one priest after another sickening from the fevers they acquire in the course of their ministrations in Liverpool; and equally sad to think of the powerlessness of all organisations, lay or religious in their nature, to grapple with the enormous amount of disease and poverty which lies sweltering in the slums.

* * *

THE *Daily Post's* story is harrowing in the extreme. We read of little children fever-stricken and lying without the slightest pretence of treatment, medical or otherwise. Houses are described in which neither light nor fresh air

are known; and which, rapidly tumbling to pieces, are yet the only shelter thousands of the Liverpool poor can obtain. Of course, drunkenness and crime flourish apace. When we take into consideration the effects of the "breeding in and in" of minds and bodies that have never known what health is or what happiness should be, we can see how the law of inheritance operates to produce accumulated effects that are grim and gaunt enough to make the most sanguine reformer despair.

* * *

AGAIN we say the subject is a national question. It is not one for churches and sects, nor for local societies and small charitable organisations. The work of reforming the slums is one in which municipalities, favoured and aided by the Government, must sooner or later become engaged. Lord Salisbury has spoken, and Mr. Chamberlain, in the December number of the *Fortnightly Review*, has his say in the matter. The prospect of active reform is, therefore, apparently by no means distant; and we may argue reasonably enough that out of the differences of opinion which the leaders of political thought entertain, we may hope that practical suggestions for the cure of these huge social evils will in due course be framed. There is always hope for such an important work in the fact that disagreement opens the theme. Full ventilation of the topic is the more likely to be secured, and reform to be expedited, when there exists a chance of the whole subject being fully and freely discussed.

* * *

WE are glad to observe that a new association under the name of "The Royal National Miners' Life-Saving Institution," has been formed, for the purpose of devising means whereby loss of life in the mining industries of this country may be reduced. The association is to agitate for the ventilation of mines, for the erection of "refuges" in workings, and for the institution in every mining district of ambulance corps. This latter object is one of the most important which can be devised for the saving of life after mining accidents. As in cases of drowning, there is often exhibited a lamentable absence of all ambulance knowledge when a colliery disaster takes place. Men whose lives are spent amidst dangers of no ordinary kind, should be the first to appreciate the value of the information which directs how serviceable aid may be rendered to those who have been injured.

* * *

THE nature of "colour-blindness" and the dangers which may ensue from the unsuspected presence of this affection or abnormality in sailors, engine-drivers, railway-signalmen, and others, have long formed subjects of medical inquiry and comment. The awkward predicaments into which an engine-driver or a sea-captain may be led who is unable to distinguish a red light from a green one, need not be particularised. Dr. Brailey, of Guy's Hospital, London, mentions that a Gravesend pilot, who came to that hospital, who could not distinguish a red from a green spot a quarter of an inch square, at any distance. The Board of Trade, in two years, found twenty-six candidates for officers' certificates who named a red light green and *vice-versa*. The contention of medical men—that a strict examination should in all cases be held regarding the correctness of the vision of those holding posts in which colour-guides form the means of safety and direction—seems incapable of refutation. It is to be hoped that the system of scientific sight-testing already carried out by Dr. Donders for the Dutch State Railways, will speedily be adopted by all our

home-railways and by the Board of Trade in testing the health of candidates for certificates of seamanship.

* * *

"COLOUR-BLINDNESS" is an affection which varies greatly in degree in different subjects. The inability to distinguish red is said to be the most common form of this affection, and to occur in about five per cent. of men, and in a much lower percentage amongst women. It is also said that loss of the colour-sense for blue and for yellow is an extremely rare affection.

* * *

OUR contemporary, the *Lancet*, is ever alive to the necessity which exists for the education of the people in the knowledge which conserves health, and enables us to ward off disease by timely attention to the conditions under which alone our physical well-being can continue. One of its latest warnings deals with "the use and abuse of the 'Mackintosh.'" There exists a popular and, as it would appear, well-founded prejudice against the well-known garment, on account of the great susceptibility to cold which its wear entails. It seems undeniable that the waterproof garment in question tends to confine the perspiration, and to convert the wearer's clothes, as the *Lancet* puts it, "into a poultice." That this dampness of the clothes, produced by wearing a Mackintosh overcoat, may be attended with serious results in the shape of lung-complaints cannot be denied. Damp under-clothing, especially in those with any tendency to chest-troubles, is the most frequent cause of lung-affections; and the caution given—to change the clothes after the Mackintosh has been removed—is therefore worthy remembrance by all who use these wraps, and who are much exposed to the inclemency of the weather.

* * *

DR. W. B. CARPENTER, F.R.S., recently delivered an interesting address on "The Bearing of Temperance on the National Health," in the Sheldonian Theatre at Oxford. The venerable lecturer is not so widely recognised as he should be as one of the earliest temperance advocates who, from the scientific side, showed the fallacy of the statement (long believed in) that alcohol was a necessity for the healthy adult, and that it was of invariable advantage to those who had to undergo severe physical and mental strain. Dr. Carpenter's remarks, regarded as a review of long experience as a physiologist, were highly instructive. They supported entirely the views which have been more than once ventilated in our columns as those concerning which there is now tolerable unity in the minds of scientific men. That alcohol is absolutely injurious to the young, and that it is not a necessity for the healthy adult, are conclusions of undisputed nature. While a third remark, that in certain cases alcohol may be found to possess dietetic uses, seems to be warranted by the experience and testimony of medical science. Needless to point out, this latter conclusion entirely cuts the ground from under the feet of all ordinary drinking customs, and limits the use of alcohol to the wise and regulated purposes of aiding the health in certain states and conditions in which a liability to disorder may exist.

HAMPSTEAD.—High and healthy position, near the Heath. STANFIELD HOUSE SCHOOL for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. MARSHALL (several years' experience), assisted by eminent masters. Prospectus on application.—[ADVT.]

Original Essays

"Life is not to live, but to be well."—*Martial*.

COTTAGE HOSPITALS.

THEIR FURNISHING.

By G. A. GIBSON, M.D., D.Sc., F.R.C.P.E.

FOURTH PAPER.

"Four long brown walls—a waste of plaster, bare
Save in some ragged prints; a glowing grate;
A flooring half of boards half flagged with slate;
A crowd of bottles; space, and light, and air;
A lean gas-pipe; a table slim and spare,
With bandages and lint;

This is a ward in hospital."

THIS picture, drawn by one who long resided amidst the scenes vividly portrayed in the vigorous lines we have quoted, is a sketch of what an hospital ward should *not* be. In the following sentences we shall attempt, in more prosaic language, to lay before the reader our ideal of what it *should* be.

As already stated, we must in this place consider the finishing and decoration of the walls, as well as the articles of furniture of the hospital.

The best material in every way for finishing the walls of the wards is oil-colour. Washing with lime is very often strongly recommended; but this requires to be done at least once a year—a considerable undertaking. Besides, the coating of lime has a great tendency to break and fall off, to say nothing of the ease with which it can be rubbed off; in short, however we regard it, liming is a great trouble. The fixed oil colouring may be cleaned without much inconvenience, and dried at once.

For every reason the tints employed must be warm in tone. Green colouring matters are apt to have a deleterious influence over the health of those who dwell in an apartment where they are used; blue makes the patients look very ghastly; grey, and the whole range of æsthetic tints, are cold and cheerless. Ruddy hues of varying shades on the other hand have a warming and cheering effect on the patients. A deep cream or pale salmon tint is at once useful and pretty for the upper part of the walls, especially along with a maroon or chocolate dado, the ceiling, of course, to be white.

While speaking of the walls, it may not be out of place to bestow a word or two on the matter of pictures. Every room in the hospital should be provided with them; they are a source of great interest to the patients, and are of use by keeping them from brooding over their troubles. They must be possessed of artistic merit; but in this age, when art is really within the reach of every one, they need not cost very much withal. Probably those who take an interest in the hospital may be able to supply nearly all that are needed, for it is common to find that large houses have quite an *embarras de richesses* in the way of pictures. The large coloured illustrations of the *Illustrated London News*, the *Graphic*, and the *Pictorial World* are found to be as useful in the hospital as in the nursery, by supplementing the other pictures on the walls.

Many of the texts and mottoes which we see in hospitals are as graceful in design as they are beautiful in sentiment; but others have unsuitable words, and are executed with hideous taste. A word of warning would we venture to give. One of the surgical clerks attached to a celebrated Edinburgh surgeon, on entering his ward one morning,

went up to the bedside of a porter who had suffered on the line the day before. "O' doctor," said the poor fellow, "wull ye tak' that thing awa'?" and his gaze directed the clerk's eyes to a scroll on the wall opposite, bearing in garish hues the Mosaic words, "The Blood is the Life." Such a text as this is entirely unsuited for a *surgical* ward, at least, and we have taken the liberty of relating the experience, as a beacon to guide others. It can be productive of nothing but evil to put up texts injudiciously chosen, and showing in their embellishment a taste akin to that seen in the religious pictures which are hawked through the streets of Roman Catholic towns.

Before leaving this matter of decorating the hospital, it may be well to say how much such an institution gains from the presence of flowers in the wards. As a rule, the patients love to look at them, and find great benefit from them. The young ladies of the district will have little difficulty in organising a Flower Mission.

In choosing the furniture, the aim should be to make the hospital as like home as possible. It must be comfortable, but if it differs greatly from the patients' usual surroundings, they are apt to feel strange at first, and afterwards, on returning to their own abodes, they may be discontented with them.

The garden should have some rustic seats, and the verandah one or two lounges of simple design. In the entrance-hall there will be a mat and scraper, with a small table, and a form for the use of any one waiting. In the hall should also be an alms-box, with some appropriate motto or text.

The day-room, or room for convalescent patients, must be bright and cheerful. Part of its floor may be covered with a carpet, and a couch and easy-chairs should be provided. An essential thing is to have a bookcase and the nucleus of a library. We cannot do better than quote some extremely sensible and fitting remarks from Dr. Swete's book. "A proper representation," he says, "through the clergyman of the parish, or some subscriber, will generally ensure a free grant of useful and entertaining books from the Society for Promoting Christian Knowledge or the Religious Tract Society, and here I would remark that though every bed should be provided with a Bible and Prayer-book, and there should also be a large print copy of each in the kitchen or day-room, yet that, while books of a strictly devotional character should form a portion of the library, it ought not to be restricted to books of religion only. Cheerful reading, as well as cheerful surroundings, such as pictures, flowers, &c., will help the convalescing patient to cast off the natural depression of spirits caused by illness."

"We do not, in the upper classes of society, see the patient recovering from illness or confined to his couch with a fractured limb, always reading the Holy volume or religious books, and yet many expect the poor to do nothing else, and think it is wrong to supply them with any light or entertaining literature. The two excellent societies I

have mentioned have more liberal notions. Their catalogues, while they contain no works that can injure the mind, have a large number of cheerful books specially adapted for the working classes. In making the selection, children's books should not be forgotten; indeed, picture-books are a great source of pleasure to children of large growth."

HOW TO BECOME THIN OR FAT.

By A SURGEON TO SEVERAL METROPOLITAN HOSPITALS.

SIXTH PAPER.

As regards *sex*, obesity is more common in women than in men, and the reasons for this are that women have less mental work and anxiety, less physical exercise, and, moreover, too much nourishment in the case of the middle and upper classes. But when the affection occurs in poor women it is either due to a constitutional tendency, or to the living chiefly upon bread, potatoes, beer, and gin, the starchy and sugary matters of which become readily convertible into fat. Turkish women and many other Oriental ladies become fat at an early age, partly from a transmitted hereditary tendency, and partly from the heat of the climate, and also through the custom of their religion which encourages habits of laziness, so that they pass a large part of their lives in rest, eating, and sleeping. Marriage is said by some to favour corpulence, while celibacy is the parent of thinness, and this they explain by saying that single people are usually more active, fretful, and agitated, while married people have rest and peace of mind. This may be so with some happy couples, who certainly deserve the Dunmow flitch of bacon; but experience would probably teach most of us that the anxieties of married life, its family cares and domestic troubles—to say nothing of certain Caudle-curtain-lectures—would tend rather to favour leanness. An acute though cynical observer may have remarked that if one of a married couple depart this life a change frequently comes over the scene, and should the wife be the departed one the husband fattens; but if the husband perish in the domestic struggle the widow often becomes thin. This kind of cure for obesity and thinness is, however, not permitted by our law.

As a general statement, it is undoubtedly true that of all causes the most powerful for the production of fatness is the ingestion of an absolute or relative excess of nutriment in quantity, or quality, or in both; and if to this be added the other favouring circumstances already enumerated, corpulence is soon established; so it may truly be said that in man, as in animals, it is really a process of artificial, though unintentional, fattening. It must, however, be borne in mind that it is not every one who can become voluntarily fat by gorging with materials which are known to produce fat in others; for the mechanism and chemistry of the digestive organs must also be in a condition to produce more fat than can be eliminated by the organs of excretion.

The *symptoms* of obesity vary according to its stage. In the early condition, one is apt to envy the plump, firm, rounded figure of the individual; in the second stage, as the accumulation of fat increases, envy is turned into laughter, as the rotund contour of the sufferer imparts a comical aspect which is freely commented on by every street Arab. But the condition is more amusing to lookers-on than to the affected individual, as the great inconveniences caused by the increase in size and body-weight, added to shortness of breath, are, in some instances, almost unbearable, though it is an every-day fact that very stout people are usually of merry disposition, as well as jolly

POWNCEBY'S PURE WINES AND BRANDIES, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from POWNCEBY & Co., Wine and Brandy Importers, 183, Oxford-street London, W.—[ADVT.]

BARNES'S IMPERMEABLE OPIUM POULTICE, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[ADVT.]

THE "SPÉCIALITÉ" LIME JUICE, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—FELTOW & SONS, Albemarle-street, London, W.—[ADVT.]

looking. The plump, happy-looking god Bacchus, and the great, corpulent, and popular Falstaff, are well-known comical types of the jovial aspect of obese people.

Fortunately for the bearers of fatty "billows," nature has provided some compensation in the increase of their muscular power and of the perspiring faculty. The former enables them to carry about their weight with more or less comfort, and the latter is a great relief to them after a bodily exertion which would be slight to a slim individual. The gait of stout people is remarkable, and must have been observed by every one—the head held back, the chest expanded, abdomen prominent, and the legs held well apart. All these are results of muscular action so as to bring the line of gravity well into the right direction; and, though the walk of fat folk is usually slow and stately, still I have known many stout people who, in spite of their shortness of breath, have been good walkers, and have been able to trundle over many a mile during the day. But when they reach the stage in which their face is like a full-moon, and when three Life Guardsmen cannot span their waist, then slight bodily exertion gives rise to the greatest inconveniences, and, as exercise becomes more and more impossible, so does the fat accumulation increase. Such people may well say with Falstaff, "A man of my kidney, think of that; that am as subject to heat as butter; a man of continual dissolution and thaw." I have seen a large number of fat folk, and know well a gentleman weighing 23 stone who will not undergo any treatment; but I have never seen any one so stout that—as the saying goes—it takes a week to walk round him.

The shortness of breath, which is a great trouble in this malady, is not due, at any rate in the early stages, to changes in any important organs, but is a functional affection, and is generally due to an increase of size of the abdominal cavity and to a pushing up of the diaphragm or midriff; and, on the other hand, to the greater resistance of the abdominal walls and midriff to inspiratory movements. In the latter stages, when the heart is surrounded by fat, and possibly becoming itself degenerated, the shortness of breath is a very serious symptom, and requires the greatest care in treatment. If the liver be degenerated, or if gout or diabetes complicate the affection, and especially if anæmia—i.e. poorness of blood—be present, which is very commonly the case, then the symptoms of these affections become superadded to those already mentioned, and the look-out is a very black one. But quite apart from these common complications, fat people are constitutionally weak mortals with lax tissues, and prone to several intercurrent diseases which they can ill withstand.

MUTILATIONS OF THE TEETH.—Ethnographers who have minutely described mutilations of the teeth in other parts of the world have said nothing of a similar practice among the natives of the two Americas. The practice is not common in the western world; and it is a little singular that people who deform to an extraordinary degree their lips, noses, cheeks, and ears, respect the integrity of their teeth. The historians of this practice overlook the abrasions noticed by Vancouver among the Indians of Trinidad Bay, and by Petitot among the Tchiglits at the mouth of the Mackenzie and of the Anderson. Finally, no notice is taken of dental mutilations formerly in use in Mexico and Yucatan, upon which Sahagun, Landa, and Mota Padilla have furnished information. M. Hamy has gathered from the last-named writers their allusions to these subjects, and prepared an illustrated monograph. The drawings indicate both filing and perforations.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—Gay.

FUNGI.

By W. ROBERTS.

OF the lower forms of vegetable life, fungi, represented by the mushroom-tribe, are by far the most important, both for good and evil. The amount of stupid prejudice displayed towards them as a whole is astonishing: so far from being misunderstood, this large class is not understood at all.

It is not our intention to deal with the subject commercially, but a few remarks on their value from an economic point of view will probably be opportune, and also serve to remove a little of that almost universal disreputable stigma which is both intolerable and unaccountable in these our boasted days of "light and leading." It is impossible to conjecture an estimate of how much valuable and really important food is annually allowed to waste from the most fallacious of reasons.

"Although," says Prof. Church,* "the value of cryptogamic plants generally is ill-understood, and especially is the real nature of several kinds of fungi, which have been eaten safely, still in some measure doubtful, yet a delicate and agreeable flavour is possessed by mushrooms, and their chief constituents have been ascertained as follows:—

	In 100 parts.		In 1 lb. oz.	grs.
Water	90.0		14	175
Albuminoids, &c. ...	5.0		0	350
Carbohydrates, &c. ...	3.8		0	266
Fat.....	0.7		0	49
Mineral Matter	0.5		0	35

The same writer also states that "Mushrooms, when dry, contain half their weight of nitrogenous matter." No other vegetable, it may be remarked, contains so much flesh-forming matter. It is, of course, understood that edible fungi of any sort are not to be eaten alone.

Dr. Badham and other botanists have denied the existence of any poisonous fungi in this country, and they account, it has been remarked, for the effects which are often produced by eating varieties different from our common species by stating that some people, through peculiarity of constitution, are injuriously affected by all fungi. In support of this statement they instance the well-known fact that some people experience the most unpleasant effects after eating the common edible mushroom, which chemically contains noxious ingredients. "We all know that idiosyncrasy of constitution may account for much and for very strange phenomena. For instance, oysters are almost poison to some persons, while roast beef will cause hysterics in other cases, and to not a few, certain odours, harmless in themselves, are causes of serious attacks of illness."

Accepting the foregoing statements as truisms in the abstract, it cannot be denied that a great number of fungi are poisonous, and some virulently so, from a practical point of view, which, indeed, so far as we are concerned, is above all the most important. The question now arises as to the most trustworthy means of discriminating the edible from the poisonous. It has been facetiously suggested that an emphatic test in the case of a doubtful species would be to eat; if death result, it may be safely inferred that the fungus is poisonous, to be discarded consequently in future,

* "Food." (Chapman & Hall.)

and *vice versa*. While admitting this to be a very easy way of settling doubt, it is open to some objection on the score of its advisability, and a probable want of human aptitude.

However, we have, in common with the best authorities, found the undermentioned rules to be, so far as they go, sufficient to prevent mistakes. All having the following characteristics are poisonous :—

1. Such as have a cap very thin in proportion to the gills.
2. Such as have the stalk growing from one side of the cap.
3. Those in which the gills are all of equal length.
4. Such as have a milky juice.
5. Those which speedily melt into a dark, watery fluid.
6. Every one having the collar that surrounds the stalk filamentous, or resembling a spider's web.

But, to these rules, several conspicuous exceptions could be named; and we would urge very strongly that no doubtful or even questionable species should be experimented with, until a small general knowledge of the subject be acquired. In addition to the foregoing rules, we would remark that it is inadvisable for the uninitiated to gather from other than in open fields, where, and only where, the common mushroom (*Agaricus campestris*) occurs.

When cooking, it may be easily seen if poisonous fungi are present. Take half an onion, stripped of its external skin, and boil it with the mushrooms. If the colour of the onion is changed, and it becomes bluish or tinged with black, it is an evident sign that poisonous fungi are present. If the onion preserves its colour there is no danger.

"In case of poisoning by fungi, vomiting should be immediately induced by an emetic and tickling the fauces (back part of the mouth) with the finger or a feather; after which a purgative clyster or a strong cathartic should be administered, with $\frac{1}{2}$ to 1 fl. drachm of ether in a glassful of water, or weak brandy. As an antidote, a solution of tannin, $\frac{1}{2}$ dr., in water $1\frac{1}{2}$ pint, or a decoction of $\frac{1}{2}$ oz. of powdered galls, or of 1 oz. of powdered cinchona bark, in a like quantity of water, has been strongly recommended by M. Chansarel."

TOBACCO-JUICE VAPOUR FOR PLANTS.—The vapour of tobacco-juice has been tested in France as an insecticide in greenhouses with great success. Instead of burning or smoking the tobacco, which is a very offensive process to some persons, the tobacco is made into an extract by soaking or boiling; and the juice is then placed over a chafing-dish, a fire, or the flame of an ordinary lamp, and deposited in the greenhouse or conservatory. Delicate plants, which are very sensitive to smoke, are not injured by this vapour, and it leaves no offensive atmosphere, while it effectually disposes of thrips, lice, scale insects, and slugs. One quart of tobacco-juice vaporised in a house containing three hundred and fifty cubic feet is an ample amount.

SANITARY INSPECTIONS.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—THE SANITARY ENGINEERING CO., 115, Victoria-street, Westminster, S.W.—[ADVT.]

WEST GREEN, TOTTENHAM, WEST GREEN COLLEGE FOR LADIES.—The Principal, MISS BRISTED, A.C.P., receives young ladies to board and educate in a thorough English education. Good schoolroom, furnished with all improvements in lighting and ventilation. Separate Swedish desks. Scientific gymnastic classes held twice a week. The pupils' studies are varied by frequent change of occupation and physical exercise. MISS BRISTED's pupils have been very successful in the local University examinations. Good garden and tennis court. Prospectus on application.—[ADVT.]

The Family Circle

"The child is father of the man."—Wordsworth.

"In bringing up a child, think of its old age."—Joubert.

HOW TO CLOTHE CHILDREN.

BY ADA S. BALLIN.

CLOTHING is one of the great powers which preserve or destroy health. Its influence is unceasingly felt from birth to death. Nay, even before birth: for errors of dress in the mother may seriously injure the child. Too heavy, too thin, or uncomfortable clothes worn by the mother, in lowering the general tone of her health, will harm the child indirectly, while tight-lacing, or the undue pressure of her garments, may directly produce deformity in it, or interfere with its circulation.

The first danger the new-born infant has to encounter is from cold. It passes from a high and almost unvarying temperature to one very much lower and exceedingly changeable. The younger a child is, the less able is it to resist cold, because the smaller it is the larger is its surface relatively to its bulk; for the area of a body varies as the square of its dimensions, while its mass varies as their cube, and the surface of the human body is an evaporating surface—consequently a cooling one. This accounts for the fact that though the adult parts with its heat less rapidly than the infant, when that heat is once lost there is more difficulty in re-establishing it, for the same surface that gives out heat is the means of receiving it, and the the adult's surface is so much smaller relatively to its bulk than is the infant's. The proportion of infants that die from exposure to cold is alarmingly great. As their lungs are especially active, they are more liable to become diseased than any other organs, and the children fall victims to bronchitis, pneumonia, and croup, and, if they do not die, are permanently injured.

From all this it is clear that children should be better protected from the cold—more warmly clad—than grown people. But what do we find when we look around us? Herbert Spencer said years ago, "What father, full grown though he is, losing heat less rapidly as he does, and having no physiological necessity but to supply the waste of each day—what father, we ask, would think it salutary to go about with bare legs, bare arms, and bare neck?" Yet this is exactly what most people allow their children to do, ignoring the fact that even if colds and the more serious diseases I have mentioned are escaped, injury must result to growth or structure—for, owing to the insufficient clothing, much of the nourishment which ought to supply the development of the organism has to be expended in keeping up its temperature. "We have met with none competent to form a judgment on the matter who do not strongly condemn the exposure of children's limbs," says Herbert Spencer. Alas, how many millions are incompetent to form a judgment on the matter! The warmth of clothing, whether for children or adults, should be regulated by the thermometer, *not* by the season of the year; and in kind and quantity clothes should be "*sufficient in the individual case to protect the body effectually from an abiding sensation of cold, however slight*," as Andrew Combe wrote forty years ago.

But even though warm, clothing should never be heavy, nor should it ever restrict any of the natural or acquired movements of the body. Before going into details as to what I consider the most healthy mode of clothing children, I wish to urge the total abolition of what Prof. Humphrey

calls "a sort of baptism to the numerous evils of fashion in dress," to which the vast majority of infants are subjected—viz., the binder, or swather. I cannot do better than quote Prof. Humphrey's words on the subject from his late address at the Congress of the Sanitary Institute of Great Britain:—"Those mischievous two yards of calico . . . constrict and hinder the expansion of that very region of the body where heart and lungs, stomach and liver . . . are struggling for room to grow and do their work." It hampers, the breathing, and—as Mr. E. O. Day points out in his useful pamphlet, "How to Prevent the Diseases of Babyhood," to which I shall further on again refer—may occasion rupture by preventing due expansion of the chest when the child coughs. It interferes with digestion, and when the stomach is distended with food, causes pain by its unyielding pressure. Dr. Humphrey continues:—"A more pernicious device can hardly be conceived than this relic of ancient nursedom, and it is impossible to estimate the number of deformed or pigeon-chests, of hampered stomachs, livers, lungs, and hearts, with their varied attendant life-enduring infirmities and curtailment of life that must

has to be done is to lay the shirt on top of the robe, the vest on the shirt, and then slip the child's arms through the arm-holes of all of them together, fasten them up, and you have finished. Thus all risk is avoided of entangling the baby in its clothes or straining it by an unnatural position while being dressed, or making it sick by turning it over and over. These clothes fulfil the two last of the important conditions of healthy clothing which I mentioned just now, inasmuch as they are as light as possible, and do not restrict any of the movements of the body or limbs; but, in order to prevent any pressure round the waist, I venture to suggest that the belt round the middle of the vest, as seen in the picture, should be omitted, as it is quite unnecessary. But, if further fastening should be required, another pair of tapes can be sewn lower down.

The clothes I have just described are admirably suited for summer wear, and can be supplemented for out-of-doors by a cashmere or merino cloak and hood to match. For cold weather, however, more warmth is required than these three garments can give.

(To be concluded.)



Improved Clothes for Infants.

result from the use of these 'swathers,' as they are called, for which there is not the slightest necessity."

To continue. "There are," Mr. Day says, "four great faults with our ordinary baby's clothes:—

- "1. They are too long and too heavy.
- "2. They do not properly fit the neck.
- "3. They require the child to be turned over and over in dressing.
- "4. They are made to pass over the child's head, and to fasten with hooks or buttons."

To obviate these faults, Mr. Day designed three garments, which were very highly commended at the recent Rational Dress Exhibition, and which are made and sold by Mr. Addley Bourne, of 37, Piccadilly. The clothes are figured in the accompanying illustrations. The first is a fine flannel vest reaching to about four inches below the feet, wrapped round the infant, and tied with tapes. The feet should be protected with knitted socks. The shirt should have sleeves reaching to the wrist, and be made four inches below the vest. The robe is to be made in the same way, but trimmed according to taste, and on this and the shirt small buttons may be used, as the vest will protect the skin from their pressure.

The vest, made of fine Saxony flannel, costs 4s. 6d., made of Welsh flannel for night use, 3s. 11d. The shirt costs 3s. 11d., and the prettily trimmed robe 10s. 6d. With these clothes, dressing is a simple matter. All that

SHORTSIGHTEDNESS: ITS CAUSES AND PREVENTION.

BY HENRY POWER, M.B.LOND., F.R.C.S.ENG.

(From the *Lancet*.)

THIRD PAPER.

THERE are still other conditions which deserve attention, and amongst them may be mentioned quality of paper, character of type, excellence of impression. Now and again the fount of type of one of our daily newspapers gets worn out, and everyone is aware of the unpleasant effects that are produced by impressions of letters which are partly imperfect—when, for example, *c* cannot be distinguished from *o* or from *e*, when *t* and *l* become confused, and the rounds of *a*, *b*, *d*, *g*, and *p* become filled with ink. Such imperfections are greatly increased by roughnesses and inequalities of the paper, and it is only requisite to read a page or two of one of the cheap editions of a popular author, such as Dickens—though even these are princely as compared with works published fifty years ago—and then a page or two of an *édition de luxe* to appreciate the influence of paper and printing. The introduction of pictures is of decided advantage, since they both excite the attention and relieve the eye.

It would, I think, be useful, especially in cases where there is an hereditary tendency to shortsightedness, to

teach by means of long slips or wall-texts with a picture at the head, sold by most stationers. The child should be placed with his back to the light, and at a distance of from four to six feet from the slip, the separate letters of which, as well as the details of the picture, may be indicated by the teacher with a light wand.

There is good reason for believing that writing has a powerful influence in inducing shortsightedness. Cohn has accordingly made the sensible suggestion that stenography or shorthand should be introduced into schools a little above the lowest classes. The size of the type or symbols is, it is acknowledged, smaller than that of ordinary writing, but not smaller than the Greek. The acquirement of the art is easy, and the saving of time is very great.

The question of the advisability of using slates for instruction in writing has been considered, and, as it appears, there is some difference of opinion. It may be shown that with the same amount of light and an equal degree of sharpness of vision, letters of the same size written with ink and with slate pencil are seen, the former at a distance of four feet, the latter at only three feet, even when the unpleasant reflex from the slate is avoided; and hence with the abolition of slates from schools one condition leading to myopia would be avoided. Weber thinks that many of the difficulties and troubles occasioned by writing are the same, whether slate-pencil, lead-pencil, or pen and ink be used; but still thinks it desirable that after the first half-year pen and ink should be preferred. Cohn agrees with Horner, but suggests the employment of white artificial tablets, made by Emanuel Thieben, a manufacturer of Pilsen, which can be written upon with lead-pencil, and which he has found to be so far superior to slate that writing which can be read at six mètres* on the white slab can only be read at five mètres on slate.

The work performed by girls, especially when very young, is not beneath the attention of the surgeon. There cannot be a doubt that every girl should be taught the use of the needle and thread, and it is satisfactory that this view is taken by the school boards generally throughout England; but it is by no means necessary that the work which is put into their hands should be of a nature to make a severe strain upon their eyes. That such strain applied to the eyes in this particular way is injurious is well-known from the effects of lace-making in Belgium and France, which is admitted on all hands to seriously impair the vision of many workers annually. I find that in moderately fine calico there are about 72 threads to the inch; and if two of these are taken up at every stitch, the work is done to the twenty-sixth of an inch, which is even so very small. But finer kinds of cambric run to 150 or more to the inch, and must be very trying to the eye. Weber observes:—"Who need trouble himself about a girl learning to knit a stocking requiring 35,000 or even 60,000 loops, when the whole article can be finished by machine work in an hour or two?" But, as Cohn remarks, if the girl is, instead of knitting stockings, occupied with Greek characters or conic sections, she is not much better off. On the whole, it appears that no child should be given work to do which requires to be held closer to the eye than one foot, and with this all due care should be taken in regard to light and other particulars.

From all this we may conclude that children, especially at the age of from ten to seventeen, should not be over-taxed, and that girls in particular should not be pressed to work at periods when they are naturally languid and exhausted. The work to be done should be mainly done in school, night-work and night-lessons should be short.

* A mètre is 39·37 inches.

Nor should children be made to do much work in the morning before breakfast, nor immediately after food. The books that should be given to young children ought to be light to hold in the hand; the paper should be clean, white, and smooth. The letters should be large in proportion to the youth of the child, well formed, and well printed. The spaces between the lines and the interspaces of the words should be relatively wide. The lines should not be too long. The light should be abundant, and should enter from the left. In writing, he should sit upright and square to the desk. The desk itself should be inclined, and there should be a due proportion between the height of the desk and the bench or stool on which the child is sitting. Reading small print by a dim light is to be discountenanced, and reading should not be permitted in bed. The work given to girls to learn sewing should not be too fine, and no black work should be given, especially at night.

DANGER FROM FLIES.—Dr. Grassi is said to have made an important, and by no means pleasant, discovery, in regard to flies. It was always recognised that these insects might carry the germs of infection on their wings or feet, but it was not known that they are capable of taking in at the mouth such objects as the ova of various worms, and of discharging them again unchanged in their faeces. This point has now been established, and several striking experiments illustrate it. Dr. Grassi exposed in his laboratory a plate containing a great number of the eggs of a human parasite, the *tricocephalus dispar*. Some sheets of white paper were placed in the kitchen, which stands about ten mètres from the laboratory. After some hours, the usual little spots produced by the faeces of flies were found on the paper. These spots, when examined by the microscope, were found to contain some of the eggs of the *tricocephalus*. Some of the flies themselves were then caught, and their intestines presented large numbers of the ova. Similar experiments with the ova of the *oxyuris vermicularis* and of the *tenia solium* afforded corresponding results. Shortly after the flies had some mouldy cream, the *oidium lactis* was found in their faeces. Dr. Grassi mentions an innocuous and yet conclusive experiment that every one can try. Sprinkle a little lycopodium on sweetened water, and afterwards examine the faeces and the intestines of the flies. Numerous spores will be found. As flies are by no means particular in choosing either a place to feed or a place to defecate, often selecting meat or food for the purpose, a somewhat alarming vision of possible consequences is raised. Dr. Grassi invites the attention of naturalists to the subject, and hopes that some effectual means of destroying flies may be discovered.—*British Medical Journal*.

SNELGROVE'S GOVERNOR GAS BURNERS.—Save quarter to half the gas bill. 15s. per dozen. Samples 18 stamps. Lists free.—60, Queen Victoria-street, E.C.; and of all Ironmongers.—[ADVT.]

MURDOCK'S LIQUID FOOD.—Extract from the *Lancet*.—This American preparation is described as "an extract of beef, mutton, and fruits, containing corpuscles, and 12½ per cent. of soluble albumen." The solution gives the blood spectrum very strongly, and contains so much albumen as to become almost solid with dilute nitric acid. Of course it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice. Among other applications, the use of the liquid food as an enema will strike every one.—VAN ABBOTT, Infant, Invalid, and Diabetic Food and Mineral Water Warehouse, 5, Princes-street, Cavendish-square, London, W.; American A B C cereals and foods generally. Dépôt for Brand's (May Fair) Meat Preparations.—[ADVT.]

DR. NICHOLS' PENNY VEGETARIAN COOKERY-BOOK.—Every household should possess this marvel of cheapness. Free for 1½d.—NICHOLS & Co., 23, Oxford-street, London, W.—[ADVT.]

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

CONCERNING CLOSETS.

By H. T. MUNDAY, C.E.

In a previous number (14) of this journal some general remarks were made intended for the benefit of those householders who desired information which might help them to understand how far their sanitary arrangements were satisfactory or not. It is proposed to supplement those observations by more particular reference to water-closets.

Some form or other of the apparatus as we know it now has undoubtedly been in use for centuries, and Mr. Baldwin Latham goes so far as to think that the summer palace of Eglon, King of Moab (mentioned in the Book of Judges) was, in point of fact, a water-closet. However that may be, certain it is that contrivances resembling our own have been discovered in the buried city of Pompeii, and it is obvious that wherever an abundant supply of water existed, its employment for the purpose of removing foul matter would readily suggest itself. And here it may be observed that for great cities the proposal to adopt the dry earth system is inapplicable. Much has been written on the subject, and figures for and against have been manipulated with the usual zeal of specialists, but without entering into details it is manifest that the immense labour necessarily involved in providing and drying the required quantity of earth for consumption and its subsequent removal in pails and carts at frequent and stated intervals, obliging continual and unpleasant intrusion into private houses, would be sufficient to condemn it when attempted on an extensive scale—at any rate in European cities. It must not, however, be supposed that by these remarks any aspersion is intended to be cast on the dry-earth system from a sanitary point of view; on the contrary, it is certainly the best method known to us for the effective defecation of excreta and urine, and when the conditions are suitable, and good slop-water drainage provided, the question of the disposal of sewage is solved as effectually as our present knowledge permits. In the city of Assunccion, Paraguay, no deep sewers exist. The excreta is collected in pails, the ashes of the house being mingled therewith, and the whole removed weekly by scavengers, who either empty the contents into the river below the town or otherwise dispose of it. The slop-water flows by open channels into a gutter in the centre of the road, where no doubt it is frequently washed down. Defective as these methods are in detail, they are sound in principle, and, as far as the town in question is concerned, fevers are said to be practically unknown there.

Returning, however, to the subject of water-closets, it is not necessary to give a further description of the "pan" type; that has already been done (see No. 14). The foul air which rises from this apparatus when the handle is pulled up, sufficiently condemns it. Frequently a loud sucking noise is heard in this closet, and the trap is suddenly left dry. This arises from the tight joints which do not admit the air sufficiently to fill the vacuum left between the D trap and the one in the basin. To obviate this plumbers pierce a small hole in the container in order to admit air, the consequence being that foul air is perpetually being ejected beneath the closet seat. This contrivance, accompanied as it always is by the D trap, is a regular den of filth and corruption. Unfortunately, too,

it exists in nearly every house, and therefore every one caring for their health should refer to the remarks in No. 14, and take immediate steps to have the foul "pan" closet removed from their homes as speedily as possible. Owing to the way in which it retains filth, it is peculiarly dangerous when any infectious fever prevails, as the contents of the slop-pails when thrown down do not pass off properly under the influence of the flushing water, but lie and rot in the traps and container. Hardy working men employed to take out these closets after years of use, have been rendered seriously ill by the offensive and dangerous nature of the job, and yet people of wealth and position would often sooner spend a hundred pounds on some new article of furniture for their drawing-room than ten to rectify an abuse that is hidden and concealed. Ladies will fuss and fume about a speck of dust on walls or windows, and yet dwell with placid unconcern over leaking sewers, filthy sinks, and drink water out of cisterns that are never cleaned, and whose overflows connect directly with the town sewers. Truly the old proverb stands ever good: "What the eye does not see, the heart does not grieve for." The female portion of our population should be particularly watchful over these things, their sedentary life and sensitive frames rendering them more susceptible to the consequences of sanitary defects than is the case with their husbands and sons, whose more active careers do something to lessen the danger to which, however, all are exposed.

(To be concluded.)

LUMBAGO may be quickly relieved (*Scientific American*) by binding a piece of oil-skin cloth, such as is used to cover tables, over the loins outside of the flannel shirt. Profuse perspiration is produced, which rapidly relieves the pain.

HEALTH AND BEAUTY.—Were it a question merely between one's own health and one's own beauty, I have little doubt that the majority of women would sacrifice health; but we are so organised that there is no injury to the outward which does not affect the inward, no secret wrong that does not break to the surface sooner or later in ugliness. In order to be beautiful we must be healthy; in order to be healthy we must never thwart nature: and if our folly interferes however remotely with our power of breathing, taking sufficient exercise or common precautions against cold, &c., the result will fall on our own heads sooner or later—and the later the worse—in some ugly form.—*Mrs. Haweis.*

THE KITCHENS OF THE EAST.—The author, during his travels in Eastern Asia, had made some observations on the cooking apparatus there in common use. The Japanese largely employ a mere fireplace, over which the vessels containing food are suspended by hooks; they have, however, two or three kinds of regular stoves of different designs. In China, stoves of a definite character are in use; one was found in Canton which was very elaborate; it was long, and had numerous openings. In Singapore there appears to be only one kind of stove, and it is of decidedly primitive construction. In fact, it is little more than a rough trough filled with earth and sand, on which are laid rough stones selected with reference to pots of various sizes; and the fire is built among the stones. The kitchens in which these constructions are found are invariably very dark and dirty. In northern Java the author found a stove made of arched clay, as half an earthen pipe would be if cut through the axis of the cylinder. This half-cylinder is set with the open part down, and fire is built under its arch. Holes are cut through the crown of the arch, to hold some of the pots, while others are merely set upon the surface.

Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

PHYSICAL EXERCISE.

By C. W. CATHCART, M.B., F.R.C.S.

(Lecturer on Anatomy in the Edinburgh Medical School.)

V.—ROWING, RUNNING, "FIVES," &c.

PASSING now to the next on our list, we may briefly consider rowing. We say briefly, because, admirable though it is as a form of exercise, the available conditions are necessarily limited, so that only a privileged few can take advantage of it. The exercise is chiefly for the muscles of the legs and back, and to a less extent for those of the chest and arms. One advantage of it is that there is little risk of bruises and sprains; the amount and degree can be regulated to suit the requirements of different individuals, while its symmetrical exertion—as in sculling, or by changing sides in a larger boat—is of much benefit to those whose physical training has previously been deficient. It is the standard form of exercise for the students of Oxford and Cambridge, as well as in some of the public schools, and has been proved by hundreds of the greatest value. Contrary to what had been supposed, the very severe strain involved by the inter-University boat-race has not been found to have caused any injury to the rowers in the case of those who have been of good constitution to begin with. Dr. Morgan very carefully traced out the after history of the crews of ten of the earlier inter-University boat-races, and found that the lives of the rowers were as long or longer than the average of men, and that their general health had been very good. The only exceptions were in the cases of one or two of naturally weak constitution who had broken down early. Only a few of those who take to rowing as a means of exercise are likely to turn their attention to racing. If they do, let them make sure that their lungs and heart are sound to begin with, and that they do not exert themselves to their utmost until they have prepared themselves for it by careful training and practice. Rowing is a capital exercise, and all who have had opportunities of trying it speak enthusiastically of its delights.

Fives, or hand-ball, is a game which is, unfortunately, too much neglected. This is to be regretted, because it is peculiarly adapted to the wants of those who live in towns, as it only requires three walls and a limited space, needs no grass, and affords most bracing and exhilarating exercise in a short space of time.

The court in which it is played consists of a cemented or paved floor about 30 ft. long by 16 ft. broad, a back wall 16 ft. square, and two side walls beginning at 16 ft. high at the one end and gradually sinking to about 5 ft. at the other. A small, hard ball is used to play with, and the object of the game is to strike the ball with the palm of the hand against the wall so that it bounds back on to the floor of the court for the opponents to strike in a similar way. By using the side walls the ball is made to pass through many angles before it reaches the ground, and in consequence its course is the more difficult to follow. Either hand is used equally, and thus the exercise has the great advantage of being uniform, and bringing both sides of the trunk and chest into action.

With little expense fives-courts might be erected in all our large towns, and their presence would be the greatest

boon to lads in shops and offices, who are in close confinement the most of the day. Such courts are much wanted, and if any one could be found enterprising enough to erect them on some spare yard or little-used area, and make a small charge for each game, he would find it an excellent investment for his money, while he would at the same time be conferring a benefit on his town.

In schools, where any of the boys are prevented by ill-health from joining in the football and cricket of their companions, "fives" has been found very valuable as a safe and efficient substitute.

Though the above games and exercises which we have just been considering might with justice be included under the term "athletic sports," still the word has come to refer specially to the various forms of foot-races, and to the competitions in leaping-pole, vaulting, throwing the cricket-ball, &c., which are now so common in schools and among young men all over the country.

They are of advantage chiefly in offering some special form of exercise (running or leaping chiefly), which may be practised by itself till improvement is attained. The short or sprint races, while not testing the respiration so much, require great muscular effort of the arms and shoulders as well as the legs and back; the longer races, on the other hand, bring the respiratory powers into active service, and are tests, to a great degree, of endurance rather than of activity.

The most important thing for all who would take part in these athletic contests is to keep themselves in good health, and have steady and persevering practice at their particular event for a month or six weeks before the competition. Care should be taken to have other forms of exercise as well as the special one required, so as to develop the muscular system all over, and it should be seen that the diet is wholesome and plain. Professional trainers insist on a diet consisting largely of animal flesh, avoiding fats, sugar, and starch as much as possible; but we have no hesitation in condemning this as unnecessary and injurious. Without entering into the scientific reasons against this artificial diet, we may state that we have personally tried it, and found its deficiencies by experience.

Constipation, with its accompanying discomforts, comes on before long, while the general disorder of the system often shows itself in boils breaking out in various parts of the body. The well-known "staleness," or over-training, is as often the result of this erroneous diet as of anything else, although too much practice at one thing generally also contributes.

Unless there is actual disease of some of the important organs, and so long as too long races are not attempted, boys and young men may be pretty freely encouraged to take part in athletic sports. Instead, however, of their being prevented from undergoing what is supposed to be the injurious practice of "training," they should never be allowed to compete without it, understanding by this that their diet should be wholesome and plain, and that their previous exercise should be systematic and thorough for a month or six weeks beforehand.

CHERRY TOOTH-PASTE.—Boil briskly 1 oz. of potassium carbonate and 1 oz. of powdered cochineal in a pint of water till reduced to 12 or 14 oz. When cold, add cream of tartar, 1 oz.; alum, $\frac{1}{2}$ oz.; glycerine, 2 oz.; and water sufficient to make 16 oz. of filtered solution. Add 4 oz. of honey, and set aside for a few days to see if fermentation occur. Carefully mix the liquid with 2 lb. of prepared chalk, $1\frac{1}{2}$ oz. of orris powder, and $\frac{3}{4}$ oz. of cassia powder.

Our Bookshelf

"Reading maketh a full man."—Bacon.

THE HISTORY OF STIMULANTS.

Stimulants and Narcotics; Medically, Philosophically, and Morally considered: by George M. Beard, M.D., Putnam's Handy Book Series. (New York: G. Putnam's Sons.)

DR. BEARD'S name carries immense weight with it in the New World, in the important question of which this little volume treats. He has brought within the compass of a handy book, an immense number of solid facts concerning stimulants at large, and has treated the entire subject from a highly philosophic standpoint. The list of authorities consulted, which Dr. Beard gives in his introduction alone testifies to the industry which animated his labours. His own words may be quoted as the best explanation of the aims and purport of the book before us:—

This work, says Dr. Beard, is now prepared in the belief that there is a large and increasing number in this country who have not been wholly satisfied with the manner in which the subject has thus far been treated; who perhaps suspect that something more than witty stories, or stirring songs, or eloquent exhortations are needed to solve a great social problem; who are beginning to feel the propriety and the necessity of discussing a question that is primarily scientific by scientific methods of reasoning; who in the spirit of honest inquiry are eagerly seeking for information to aid them in forming their opinions; and who are ready and willing to attend to facts that are novel, and to listen to views that are directly opposed to their own, and who recognise the need of patience and wisdom as well as of courage and enthusiasm in conducting a great reform.

A very full *résumé* is given of the stimulants and narcotics used by various nations—the "haschish" of the East, the "koumiss" of the Tartars, and the "coca" of the South Americans being duly described amongst the varied products of nature in the way of nerve-exciting substances. Some curious facts are cited in illustration of the sustaining powers of various substances. Speaking of tea and coffee, Dr. Beard says:—

I have always observed that tea and coffee drinkers eat less than those who wholly abstain from these articles. I first made this observation years ago, in my boyhood, when I had, to say the least, no theories to prove on the subject, and when I approached the investigation untrammelled by prejudice. Those who alternate between total abstinence from all these things, and moderate use of them, find very often that, when they totally abstain, they eat more of ordinary food. Thousands there are to whom a cup of coffee is the chief feature of their morning meal. Soldiers and sailors regard the deprivation of coffee as a greater affliction than short rations of meat or bread. The Gallæ, a tribe of Africa, in their long wanderings, sometimes take nothing with them except a bag of coffee and butter, done up in bags about the size of a billiard ball, and one bag-full suffices them for a day.

Of tobacco, he remarks that:—

Its power to sustain the system, to keep up nutrition, to maintain and to increase the weight; to brace against severe exertion, and to replace ordinary food, is a matter of daily and hourly demonstration. I have known convalescents from fevers to be supported for long periods very largely by their quid or pipe. Sailors and soldiers in the war relished the tobacco rations even more highly than their coffee. There are thousands who, in crises requiring great exertion, forego their meals and increase their pipes or their chews.

Speaking of alcohol, Dr. Beard says:—

Its sustaining power in health or in disease is very great. A lady friend of mine, on account of the very severe illness of her son, was obliged to confine herself very closely to the duty of

nursing, with great loss of meals and of rest. Owing to intense and long-continued anxiety, she became so reduced that she could eat scarcely any solid food whatever, and for more than two weeks she lived almost exclusively upon lager beer, of which she took some half-dozen bottles daily. This, with now and then a bit of cracker, was her only nutriment. At the end of that time she was not very greatly reduced in weight, and retained a fair share of vigour.

Dr. Anstie, who has written so ably on this subject, cites a number of remarkable illustrations of the power of alcohol to sustain life. An old man of eighty-three years, affected with chronic bronchitis, lived for about twenty years on a bottle of gin a day, and a small finger-length of bread a day. He used no tea and no coffee, but smoked his pipe. A young man, with disease of the heart, lived two years almost entirely on brandy, since nothing else would remain on his stomach. At first, six ounces; subsequently, a pint was given him. "He kept his flesh and good spirits nearly to the last." One child lived on Scotch ale for a fortnight, and another, suffering from marasmus, lived for three months on whisky and water alone. One lady, about twenty-five years of age, lived "solely on bitter ale and brandy and water" for twelve months, at the end of which time she was greatly prostrated, but was not emaciated.

Such exclusive dependence on alcoholic liquors is, of course, to be deprecated, except in peculiar emergencies where nothing else can be obtained, or nothing else can be tolerated. Used in this way, even the milder forms of stimulants will more than likely bring on or aggravate serious organic diseases. There are crises in life when this power of alcohol to sustain the system may prove a signal blessing.

The foregoing facts are highly instructive, and show that, under certain circumstances, stimulants may aid the bodily powers in enduring fatigue in a remarkable manner. Dr. Beard sums up his topic in an equally interesting fashion, and his words are so apropos that we make no apology for quoting them here. Dealing with the question "How shall any individual determine whether he is benefited or injured by the stimulants and narcotics that he uses?" Dr. Beard says:—

A friend of mine once expressed to me the wish that he had a little bell in his stomach which should strike as soon as he had eaten just enough. Such ready-made contrivances for saving thought and care in matters of hygiene are not provided for us in this world. We are left to settle these hard and complex questions by patient and long-continued study of the history of races, nations, and communities; by close and discriminating observation of our personal experience from day to day, and from year to year, and only those who think that health and life, and the usefulness and happiness of ourselves and of all who may succeed us are of little worth, will hesitate to undertake and pursue this method. Mathematics are of but little service in solving this question. The estimates that have been made of the number of ounces of alcohol that can be daily taken, are of no practical value.

The following general considerations, together with the facts already given, may be of service. Nervous temperaments cannot usually bear stimulants and narcotics of any kind, as well as the phlegmatic or the bilious temperaments. Organisations that are generally susceptible to irregularities of diet, to changes of the atmosphere, to the fatigue of over-work, or to mental impressions of any kind, are usually susceptible to stimulants and narcotics. Nervous people, therefore, need to be especially cautious in forming habits of indulgence.

Those who live much in the open air, and labour with muscle as well as brain, can use them more freely than those who live mostly indoors, and are engaged in exclusively mental occupations. Muscular exercise, to a certain extent, counteracts the evil effects of over-use of these agents; but in nervous organisations this counteracting power soon finds its limit. According to Marcet, shopkeepers who live indoors are much more liable to chronic alcoholism than coal-porters, who, although they drink more freely than shopkeepers, yet spend much of their time in the open-air.

Dr. Beard concludes that,

Although it is probable that stimulants and narcotics may exercise a slowly pernicious influence on the nervous system, without giving cause for suspicion by any immediate or temporary symptoms, yet, as a rule, there is little question that in nearly all such cases, close and intelligent observation can detect some evil effects after each act of indulgence. So long as the immediate

effects are good the permanent effects will probably be good; so long as the immediate effects are evil, the permanent effects will be evil. The great problem is to distinguish rightly between those effects that are good and those that are bad. The distinctions already drawn between *stimulation* and *narcosis* will be of service in solving this problem. But there is always room for deception, especially for those who wish to be deceived. In our civilisation continuous vigilance is the price of health, and those who think it too dear, have the choice of dispensing with the luxury. I do not know, however, that this difficulty of determining what does and what does not injure us, applies very much more to negative than to positive food.

The chief value of Dr. Beard's book lies in the thorough and scientific manner in which he treats the entire subject. All who are interested in temperance reform will certainly find food for thought in the pages of this volume, which is no less a valuable contribution to the side of true temperance than to the scientific aspects of a subject of vital importance in every phase of social life.

A PLUMBER'S TEXT-BOOK.

Plumbing: A Text-book to the Practice of the Art or Craft of the Plumber, with supplementary chapters upon House Drainage, &c. By William Paton Buchan (fourth edition), with above 330 illustrations. (London: Crosby, Lockwood, & Co. 1883.

THIS is an excellent manual of technical nature, and dealing with the various details which concern the plumber in his construction of sanitary house-fittings. The day of rule-of-thumb work in plumbing and house-fitting has happily passed for all artisans who care to boast that they properly understand their trade and business. The plumber who desires the confidence of sanitarians to-day, must be something more than a mere imitator of the ways and works of his predecessors. He must possess an intelligent appreciation of the principles on which house-sanitation is founded, and as he is entrusted with the construction of works on the integrity of which the household health depends, it is clear that the scientific plumber becomes in the strongest sense, the ally of the health-reformer.

Anyone who wishes to see the strides which plumbing as a science and an art has made of late years cannot do better than consult Mr. Buchan's well-illustrated manual. Written in a thoroughly practical spirit, Mr. Buchan's volume should form a text book in all technical classes where plumbing is taught. Masters could not place a better book or a safer guide in the hands of their journey-men and apprentices, and not the least of the merits of the work are its freedom from bias, and its fair method of stating the advantages of the various schemes of sanitary house construction. The section on drainage is especially clear; that dealing with closets is well illustrated; while the general details of the entire subject are in every case faithfully treated and described in language free from dubiety. The popularity of the book, we are glad to see, has created a demand for the present new and enlarged edition.

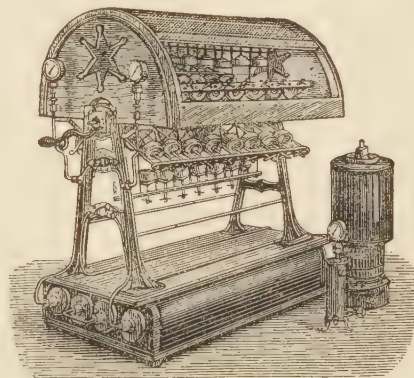
COLOURED INKS FOR RUBBER STAMPS.—*Blue Ink:* Indigo in fine powder, 10 parts; gum arabic, 4 parts; glycerin, 4 parts; water, 3 parts. Dissolve the gum in water, mix it with the glycerine, and then triturate it thoroughly in a mortar with the indigo until a thoroughly homogeneous mixture is obtained. For *black ink* use nigrosin in less quantity, and add dextrin to stiffen the mixture.

Sanitary Appliances, Etc.

THE BEINS SODA-WATER MACHINE.

THE unwholesomeness of ordinary aerated waters, as to which an alarm has again been sounded, may be due to three distinct causes. The water itself may be impure—a defect which is, of course, to be remedied by an improved supply with efficient filtration, or, if necessary, distillation. But whether the water be good or not the drinks may be rendered unwholesome by the use of objectionable ingredients in preparing the different flavours. This also is a matter to some considerable extent under the control of the manufacturer, although improvements in this respect have been rendered less easy by the nature of the process hitherto employed for "aërating" the beverages. Supposing, however, the water to be pure and the drinks to be prepared with unobjectionable materials, there remains the risk—amounting, under the ordinary system of aëration, to something more than a probability—of contamination by lead, copper, and perhaps tin, and also by the vapour of sulphuric acid. This is a matter of more serious import, for it points to inherent defects in the system of manufacture.

The soda-water machines hitherto in use, whatever may be their apparent differences of construction, are all made on the same general principle—that is to say, carbonic acid gas is obtained by adding sulphuric acid to whiting or some other carbonate, and aëration is effected by forcing the gas and water together into a metallic cylinder, and there subjecting them to agitation. The whiting and sulphuric acid may both contain impurities, but in any case a portion of sulphuric acid vapour passes over with the carbonic acid gas, and communicates that sourish taste which is more or less perceptible in water aerated in this manner. Attempts are sometimes made to purify the gas, but the purification is necessarily imperfect. The solution of metals by the water charged with carbonic acid gas—a far more serious matter—is facilitated by the presence of sulphuric acid vapour. As a safeguard against



THE BEINS MACHINE.

this metallic contamination, the best makers of soda-water machinery recommend the silvering or tinning of the inner portions of the machine; but the protection thus afforded is by no means complete, for the silver coating is liable in a short time to be worn away mechanically by the friction of the water during aëration, and a coating of tin disappears even more rapidly, while some parts of the machinery cannot be thus protected. Under the most favourable circumstances, therefore, the ordinary system of producing aerated beverages fails to afford absolute security against poisonous metallic contamination.

Our attention has, however, been drawn to a soda-water machine, constructed on an entirely novel principle, which excludes the possibility of either metallic or other contamination during the process of aëration, and at the same time facilitates the introduction of a simpler and purer class of aerated beverages than has hitherto been possible. This machine, to which the International Jury at the Amsterdam Exhibition have awarded the gold medal—the highest award for soda water machinery—is the invention of Messrs. Beins Brothers, of Amsterdam, whose agency is at 27, Chancery-lane, E.C. The main features of the invention are:—

1. Carbonic acid gas is obtained in a pure state from bi-carbonate of soda.
2. The various beverages are aerated in the bottles or "syphons" with this pure carbonic acid gas, and do not come into contact with

metal. They are, therefore, free from all possibility of metallic contamination.

3 The "syphons" are so constructed that even when the waters they contain are being poured out there is no contact with metal.

4. Beverages of different kinds in bottles of any shapes or sizes, as well as in "syphons" can, if required, be aerated simultaneously on the same machine.

5. No steam or other motor is required.

6. The machine is simple in construction, and occupies little space, and the outlay for repairs is stated to be almost nominal.

The following is a brief description of the process:—

To obtain carbonic acid gas, an iron retort (two or more of which are supplied with each machine) is filled with bicarbonate of soda and hermetically closed. It is then placed upon a small stove, so constructed that a single blue gas-flame is sufficient to heat the bicarbonate to about 300° Fahr., and liberate one-half of the carbonic acid gas it contains. The monocarbonate of soda which remains in the retort is saleable at nearly the same price (about £7 per ton) as is paid for the bicarbonate, the proportion yielded being 12½ cwt. to the ton, and the actual cost of the material for aëration is therefore small.

The gas jet being lighted, carbonic acid gas is driven off under high pressure, and is conducted, by means of strong copper pipes, through a refrigerator into an iron or copper reservoir which contains fine dry charcoal. This is done to remove any vapour arising from particles of paper, wood, or straw from the packing which might possibly find their way into the retort and be burned during the process of heating the bi-carbonate. From this reservoir the carbonic acid gas is next conducted, under regulated pressure, into a second or working reservoir by simply turning a cock, the action of which is shown on a dial pressure-gauge. From the working reservoir the carbonic acid gas is admitted at the proper time by means of a second cock into one or more hollow spindles of strong copper. Each spindle has forty-eight small circular holes, which are connected by means of valves of hard india-rubber with the bottles containing the waters to be aerated, the bottles being attached, with the aid of easy running screws, to a frame surrounding the spindle. These bottles may be of glass or stone, of any size or shape, with or without patent stoppers, and "syphons" may also be attached at the same time. The rubber valves allow the carbonic acid gas to enter the bottles, but do not permit any liquid from the bottles to escape into the spindle.

When the full number of bottles has been attached to the spindle, on opening the cock of the working reservoir in which the carbonic acid gas is retained under the desired pressure, the gas is seen to pass into the bottles. The handle is then to be turned which carries round the spindle and the bottles attached to it, the latter protected by a guard. The water and gas are thus violently agitated together, and complete aëration takes place in about ten minutes, the time varying with the pressure of gas and depending also upon whether the waters are required to be more or less highly charged.

It will be observed that while liquids of any kind can be readily aerated by this process, it enables the manufacturer to produce simpler and purer aerated beverages than has hitherto been possible. The best kind of lemonade, for instance—that made with lemon-juice, sugar, and water—could not be safely passed through the metallic cylinder of an ordinary machine. But by the Beins system the beverages are prepared in clean wooden vessels; the bottles, previously well washed, are filled with the prepared drinks, and the process of aëration does not affect their quality, or impart to them any trace of metallic or other contamination.

The question of the purity of the water supply itself is one usually left to the soda-water maker's own care. The inventors of the Beins machine, however, state that they are now perfecting an entirely novel and simple process by which ample supplies of distilled water may be obtained at a nominal cost.

THOMSON'S COD-LIVER OIL CREAM.

WE have received a sample of this preparation, manufactured by Mr. Thomson, of 40, Dublin-street, Edinburgh. It is an elegant form of emulsion, in which hypophosphites of lime, &c., and pancreatine are combined with the cod-liver oil in a fashion well adapted to suit the requirements of the most delicate stomach. Those who desire a preparation of cod oil agreeable to the taste and thoroughly reliable as a restorative medicine, will find in this "Cream" an admirable substitute for the pure oil. For children and invalids generally, this preparation must be highly commended.

AN illustration of stinginess is cited by an Arkansas editor, who knows a man that talks through his nose in order to save wear and tear on his false teeth.

Our Letter-Box

"Conference [maketh] a ready man."—Bacon.

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to "THE PUBLISHER," at the same address.

Contributors are requested to send stamps for the return of the MSS. in event of non-acceptance. Every care will be taken to ensure the safety of MSS., but the EDITOR and PUBLISHERS cannot hold themselves responsible for accidental loss.

Correspondents are requested to write on one side of the paper only. The EDITOR disclaims responsibility for the opinions expressed by Correspondents.

LETTERS TO THE EDITOR.

THE LONDON WATER SUPPLY.

SIR,—The time is probably not far distant when the London water supply will once more engage the earnest attention of the millions who are dependent upon it for one of the most essential necessities of health. It is, therefore, of the utmost importance that statements which are made with a view of guiding public opinion with regard to that question, should be carefully examined.

At a meeting of the shareholders of the East London Water Company, on the 4th ult., Mr. Coope, M.P., is reported to have made the following observations, which have been reproduced within the last few days in one of the daily papers:—

"As regarded the quality of the water, he was happy to assure the proprietors that there could be no doubt upon the point. He might tell them that the directors had not implicit confidence in the reports of Dr. Frankland, who was employed by the Government to test the water supplied to the metropolis. This gentleman had a strong prejudice against all water derived from river sources, and in consequence had made frequent reports, the accuracy of which they had ventured to question. But in order to test these reports the water companies had appointed three scientific men, who had directed their attention for some considerable time to the question of the quality of the water. He alluded to Mr. Crookes, Dr. Odling, and Dr. Meymott Tidy—three very eminent men, who certainly on many occasions did differ seriously from Dr. Frankland. He would mention one circumstance which rather confirmed the view of the directors as regarded the non-reliability of Dr. Frankland's reports. In order to show how very uncertain was the supply from the rivers, Dr. Frankland had invariably referred to the Tottenham well supply as being perfect, and that this should be the criterion of all other water supplied to the metropolis. It was a rather curious circumstance that this well in May last failed to give its supply. The Tottenham Local Board then applied to the East London Company to give them a temporary supply; and from that time to this they had supplied their well with a 4-in. pipe, which had been running continuously. They had supplied them with 20 million gallons of water, or at the rate of 180,000 gallons a day; but they still found every month the same report from Dr. Frankland upon the excellent—the super-excellent—quality of the Tottenham Local Board's water supply, which other water companies (the East London among the number) ought to endeavour to imitate. Therefore he thought they had not been unreasonable in appointing other independent scientific men to confirm or question the reports of Dr. Frankland."

If we refer to Dr. Frankland's reports since "May last," we read in the report for May, the water of the East London Company contained "an exceptionally small proportion of organic matter." In the reports for June and July he says that that Company's water was "exceptionally free from organic impurity;" whilst in August it was "much of the same quality as in the previous months," and in September—the last report which has reached me—it was "remarkably free from organic matter." Taking Kent water as usual as unity, the organic impurity in the Tottenham supply is, on Dr. Frankland's showing, on the average of the above five months 1'62, against East London 2'28. There is therefore chemically no essential difference between the two supplies, and the small contribution of the East London to the Tottenham supply does in no way justify Mr. Coope's conclusions. Even had there

been a material difference, those conclusions should not have been drawn on October 4, since Mr. Coope might have seen in Dr. Frankland's report for August that the engineer of the Tottenham Local Board wrote: "The samples sent you for analysis contained no quantity of the East London Company's water."

Whilst the attempt has thus signally failed to throw doubt on Dr. Frankland's figures, there is, indeed, some evidence that if the latter has erred at all, this is in the direction of leniency towards the East London Company. Let us, for instance, take the reports for September on the water of the seven companies which derive their supply from rivers. According to Dr. Tidy's figures, the average of organic nitrogen, which is the more important constituent of organic contamination, was 0.025 per 100,000, whilst Dr. Frankland found only 0.020, and this notwithstanding that Dr. Tidy's samples were all taken "from works," whilst Dr. Frankland took them from the mains in the centre of the consumers. There can be no doubt that the latter is the proper course, as it takes into account any contamination between the works and the dwellings of consumers. Dr. Frankland, therefore, shows in the river water supply 20 per cent. organic nitrogen less than the company's chemist, and yet we are led to believe that he has a strong prejudice against river water, that his figures are wrong and Dr. Tidy's correct.

Dr. Frankland's average of organic carbon is in excess of Dr. Tidy's, but this signifies little from a sanitary point of view. Leaves dropping into the water increase the organic carbon, but have no influence on health. But here I question some of Dr. Tidy's results. If he had repeated his analysis of New River water, he would certainly have come nearer to Dr. Frankland's figures than the 0.016 per 100,000 he gives in his report. Why, Dr. Bernays, as the company's analyst, found almost four times that quantity even in Kent water!

As regards the principle, whether or not the rivers Thames and Lee are desirable sources of water-supply, we have no doubt reason to congratulate ourselves on the state of the water the metropolis is supplied with. But that congratulation is qualified by the undeniable fact that these rivers above the intakes are daily exposed to pollution, and are daily being polluted by most abominable matter. This is unpleasant; but what makes matters worse is that such pollution can sometimes be traced even in the water after it has passed through the sand-filters. There is, therefore, room for improvement, and, if this can be had at a reasonable cost, we should have it.

F. C. S.

QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

GENERAL.

ETHEL C.—No danger in using the preparation.

AUSTIN G.—Read our papers on the Skeleton.

INTERESTED.—About 98.5° Fahr. See our paper on the "Domestic Use of the Clinical Thermometer."

ARAB.—The case was that of an Arab mare belonging to the then Viceroy of India.

TREVOR.—No evidence at hand. Apply to the agents.

JUVENILE.—Mesmer was a French peasant who claimed supernatural gifts of healing.

OXLEY.—No such person known to us.

B. G.—The semi-lunar valves of the heart are two in number.

One exists in the left ventricle at the entrance to the aorta, and the other in the right ventricle at the entrance to the pulmonary artery.

S. E. O.—See Smith's Antiquities.

OLGAR.—A bone of the skull situated in the eye-cavities.

B. PRENTICE.—The lowest group of animals is named *Protozoa*, and the *Protophyta* are the lowest plants.

C. A. M.—Bacilli and bacteria are believed to represent lower plants. See our papers on the "Germ Theory."

W. H. HAMILTON.—Bourne Hall, Bournemouth, and Westbourne Tower, Bournemouth, are two resorts which might suit you. We fear there are no "homes" of the class you require on the east coast. We have inquired for you, but have not been able to hear of any on the east coast. Can we be of any further service? If so, command us.

BREATHING.—Read Dr. Holmes' "Voice, and Voice Production" (lately reviewed in HEALTH): (Chatto & Windus, London), for full information regarding singing in relation to breathing. Yes; the lungs can be well filled by a slow, steady inspiration. In men, the breathing is more from the abdomen than from the chest. In singing, there must necessarily be an escape of air from the chest. You cannot "retain" the breath beyond your capacity without

inconvenience, and, in singing, the breathing has to be regulated simply by the exertion entailed by the exercise. There is a book on "Musical Education" by Signor Bach (W. Blackwood & Sons), which you should find of use. If not fully satisfied, specify your difficulties more particularly.

SCISSORS TO GRIND.—The bones should be macerated in water for a sufficient time to allow the flesh to become detached easily. They are then to be carefully cleaned and dried. One part water to 2 parts spirits of wine is sufficient to preserve most soft parts.

NORTH.—If you will visit a large ironmonger's establishment, you cannot fail to have your special requirements suited. The "slow combustion" you name is a good stove. As you will have a chimney in your bedroom, there should be no difficulty in your finding a good stove. You might call at 121, Oxford-street, London, W., or write there for particulars (to Messrs. Duncan & Co.) of "De Choubersky's Patent Russian Stoves on Wheels," to burn coke or coal.

MED.—Romanes' "Animal Intelligence" (International Science Series. Kegan Paul & Co.) is the book which will suit you. See also two papers on "Monkeys," by Dr. Andrew Wilson, in recent numbers of *Gentleman's Magazine*. We are not aware that Mr. Huxley has written anything on this topic. His essay on "Animal Automatism," in his "Essays and Reviews" (Macmillan), might suit you.

SANITARY.

ANXIOUS G.—Carbonic acid gas (CO₂) consists of carbon and oxygen in chemical union. It is found in deep mines and wells, and is breathed out from the lungs and skin of animals. In ordinary air it exists in the proportion of about 4 parts to 10,000 of air.

CECIL B.—The flushing system you name is a good one.

ALGA.—Attend to the condition of the floors. Are you sure there are no drains in the basement? A cesspool (unknown and unsuspected, of course) would account for the nuisance.

TRIP.—Tobin's tubes might suit you.

E. ERSKINE.—Liability to become coated with deposits, general inefficiency as a trap for gases, and a liability to leakage.

PETER B.—The electric light is your best resource. As you are situated, with steam power at hand, the cost would be trifling.

B. DILLON.—For the information you require, see Parkes' "Hygiene."

A. BAXTER.—About 3 per cent., we believe; but this might be increased without danger.

MESURIER.—We highly approve of the Banner system. The principle of having a current of fresh air always in the pipes is the foundation of sewage sanitation.

MEDICAL.

C. HARDWICKE.—As you value your children's health, give up dosing them as you have been doing. Give them a vegetable dietary, brown bread, &c. (avoiding tea and coffee), for the constipation. See that their sleeping-room is well ventilated, and give a dessert-spoonful of cod-liver oil emulsion after meals to the delicate child. The others might also be tried with this medicine. In your own case regulate your dietary. Don't eat suppers; see that you sleep in a well-ventilated room, and take a little Morson's Pepsine with your food, as directed on the bottle. Irregularity in feeding is highly injurious.

S. SELLARS.—See advice to "Thomson" in No. 33. HEALTH. For the pimples, take the sulphide of calcium pills there prescribed. Be careful as to diet; avoid tea and coffee and all stimulants.

NOSREDNA.—Try the effect, first, of giving only concentrated foods (such as Brand's Beef Essences and like preparations, and Carnrick's Peptonoids), for a time, to give the stomach rest. Avoid a vegetable dietary for the present, and a little Pepsine may be taken with the food. So far as we can see, there is either some irregularity in diet which you must discover, or the stomach is highly irritable. In either case, the advice as to the concentrated foods, and the rest which may thus be given to the stomach for a while, should be followed. Glad to hear from you again.

PHONETIC.—Do you eat late at night? If not, the symptoms you name are of a nervous kind. Try the effect of 15 grains bromide of potass, taken each alternate night for a week or so on going to bed. Write again if not improved. You probably study too much.

LAYMAN.—The nerves of sight, smell, &c., do not come from the cerebellum. Your reading is at fault. We are of opinion your symptoms arise entirely from your health in general being below par. You want a more nourishing dietary, and the judicious selection of a pair of spectacles (as by Mr. Browning's method, of 63, Strand, London) would aid you. Give up suppers; but you seem to be in need of generous living, and this alone might, with attention to health at large, relieve all your symptoms.

E. H. H.—A little "Æsculap" or "Frederichshall" water taken in the morning for a time would assist your case. The "bad taste" arises from dyspepsia. Look to your teeth, and, if you smoke, be moderate in respect of this practice. Try also a little "Pepsine" for a time with your food.

ECOSSAIS.—Difficult, from your short description, to say what the nature of your trouble is. Probably the pain is purely muscular, however. Try cold sponging, and brisk friction afterwards, in the mornings. A belladonna plaster, or a slight application of chloroform liniment, might relieve you. If the pain persists, have your chest examined; but the fact that your breathing is in no way implicated seems to point to a muscular pain as the cause.

CANTON.—The occurrence you name is not too frequent for a healthy person. You seem to have improved vastly. Leave off the tonic, and continue all your health-precautions, attending closely to your general health in all ways. The hair wash named is a good one.

HARRY.—You should know that what you name (as remarked in reply to "Canton" above) is as often as not a sign of health, not of disease. The symptoms you describe are really as much mental in their origin as physical. Be cheerful, avoid all stimulation in food and drink, take moderate exercise, sleep on a hard mattress, avoid suppers, and see to the ventilation of your room. Cold sponging, and brisk rubbing with a hard towel thereafter, should be tried each morning. The tonic should be stopped now, and a little "Æsculap" water taken in the morning if constipation continues.

T. FRASER.—[You are wrong in supposing that we reply to correspondents by letters. We only occasionally, where need exists and where the request is made, send the addresses of reliable medical men to our correspondents.] See advice to "Harry," above. You suffer from no actual disease. In addition to advice there given, take a teaspoonful of Fellows's Syrup of the Hypophosphites thrice daily, in a wineglassful of water before food.

F. W. D.—Read and follow advice to "Harry" and "T. Fraser," above. Be cheerful, and don't despond.

J. G. T.—In such a case as yours, we must respectfully decline to advise you. Along with the medical opinion you had, you should have obtained full advice with regard to diet, &c. Your diet should be plain and not stimulating, and you should avoid all excitement and strain. Consult your doctor again, and he will prescribe a tonic, which you evidently require.

VICTOR.—Glad to hear you are better. See advice to "Harry," above. By careful living and perseverance your symptoms will in time disappear; only you should bear in mind that all you mention may be, and very often is, consistent with health. Attend to your general health, and all will be well.

ZENO.—We know nothing of the electrical appliances you name. We have no faith in such appliances as advertised; but, if you obtain one and forward it to us, we will be glad to test it for you. We should advise you to wear socks or drawers in bed. The symptoms of chill indicate merely that your general health is a little low.

ANNIE.—Generous, but not stimulating diet. Take a little "Æsculap" water occasionally in the mornings; try 10 drops of *Fer Bravais* twice daily in water, and apply the following lotion—bicarbonate of soda, one drachm; glycerine, one and a half ounce—to the affected parts. You can be cured, but your general health must be improved. Write again in a fortnight and say how you are.

M. REYNOLDS.—Apply to the Hospital for Nervous Diseases, Portland-terrace, Regent's Park, London, N.W. You require a thorough examination by a competent physician, who will prescribe a tonic which may relieve or cure you.

A. D. HUNT.—Don't be alarmed. Read and follow advice to "Harry" in present number of HEALTH.

W. M. FOOT.—You would be the better for a course of cod-liver oil emulsion—a teaspoonful thrice daily after food. If the phlegm troubles you very much, try the effect of inhaling the steam of a pint of hot water (150° heat), to which has been added a teaspoonful of a mixture composed of one ounce carbolic acid and seven ounces water. If this inhalation irritates you too much, try the effect of inhaling the vapour of a teaspoonful of the following, added to a pint of water at 150° F.:—Oil of pine, two drachms; carbonate of magnesia (heavy), one drachm; water, to make up three ounces. Label each mixture:—"The Inhalation: a teaspoonful to be added to a pint of water at 150°, and the vapour to be inhaled when the cough is troublesome."

SPERO.—Try the effect of washing the feet in a saturated solution of boracic acid, along with strict regard to cleanliness. The general health must also be carefully looked to. Write again, if not improved.

ENDYMION.—You have quite rightly stated your case. Yours is one of overwork and prostration. We should recommend you to take Fellows' "Syrup" for a time as a nerve tonic, and to pay strict attention to your general health. Rest should be your sheet-anchor; and if you take our advice you will rest for a long period

and give up all study. Glad to be of further service, if necessary. Don't try a gymnasium at present.

VERAX.—Thanks for your good wishes. We should say, don't eat late at night; try to run out, even for ten minutes, as often as you can during the day, for a breath of fresh air; walk to and from business, and counteract the closeness of the atmosphere by exercise. See to your ventilation when at work. If not improved, write again.

JUVENIS.—1. We prefer either the powder or fluid. 2. A symptom of stomach derangement usually, but may arise from various causes. Continue the "Pepsine" for a time. 3. "Æsculap" or "Frederichshall" water occasionally, taken in the mornings. Try a vegetable dietary in preference to all aperients.

W. E. J.—As a simple preliminary, try the sulphide of calcium pills, as ordered to "Thomson," in No. 33 HEALTH, and take a little "Pepsine" daily with your food. If this treatment is not successful we shall be glad to hear and advise further.

BIRMINGHAM.—A stomachic medicine, intended to allay any pain during digestion, and to relieve acidity. We are not sure (from your copy) if the proportions are correctly written. Probably in the original they are correct enough.

X. Y. Z.—The tonic should be taken for a little longer, and you must look well to your general health. We still believe your symptoms are more mental than physical. In a week or two substitute ten drops of *Fer Bravais* twice daily for the tonic. By curing your physical ailments your nervousness will disappear. You must be the best judge as to whether the hydropathic treatment is doing you good. The simple cold sponge bath in the morning (not wetting the head) is preferable, in our opinion.

M. A. C.—What can we say in answer to your inquiry, save to remind you that the solution of such a question is really a matter of individual responsibility? We quite see your drift, and you have our sympathy. To the first part of your question we reply that where there is a chance of propagating ailments, all the idea of "happiness" is absurd. To your second inquiry, we reply we believe medical experience speaks against the use of such appliances. They have a tendency often to develop disorders, and one French author has been most eloquent over their positive harm. It isn't a question of "morals" at all—we agree with you entirely—it is one of that physical well-being without which "morals" are nowhere. Send us your name and address.

ANTIQUARY.—No; the condition may arise from simple intestinal derangement, having no connection with any zymotic disease. The "mucus" is only the increased secretion of the lining membrane of the digestive tract. We should recommend the occasional use of a mineral water (e.g., "Æsculap" or "Frederichshall") in the mornings. For piles try the tincture of hamamelis. A teaspoonful to 8 ounces of water, and three teaspoonfuls of this mixture to be taken every three hours.

E. NASH.—Try the effect of hot salt baths applied frequently to the knee, as hot as can be borne. Thereafter rub into the knee warm oil or warm Vaseline, and persevere for a time with this treatment. If not relieved thereby kindly write again. You might also try the effect of applying to the knee flannels which have been wrung out of a mixture made by adding half an ounce of carbonate of soda and six drachms of liquor of opium to nine ounces of hot water. Over the flannels put a gutta-percha layer, and a kind of local vapour-bath will thus be given.

ORMOND.—You live too freely. Give up all spirits and beer, and try a little good claret (with meals only) instead. For the face blotches try the pills ordered to "Thomson," No. 33 HEALTH. You smoke too much also. The face symptoms are merely indications (and warnings) that your drink and smoking must be curtailed. If you don't follow our advice look out for gout.

R. RICHARDSON.—See advice to "Harry" in present No. of HEALTH. Take for a time the tonic recommended to "T. Fraser," in present number.

JACK-O'-LANTERN.—Try the sulphide of calcium pills, ordered to "Thomson," in No. 33, HEALTH. If not improved, write again.

RECTUM.—Describe age, habits, health, &c. Your letter is too brief for us to advise upon. Spleen and pancreas have certainly nothing to do with your ailment.

ANXIOUS PROVIDER.—The Cond's "Fluid" (1 part to 10 or 15 of cold water) is the preferable liquid. But bear in mind that the practice is by no means universally approved of. Kindly favour us with your experience of the results in due course. The subject, we agree with you, is an all-important one.

JOHN SMITH.—No; not if the general health is good. Use cold sponging each morning.

PHILAN.—We shall make inquiry and let you know (in HEALTH), when we discover the price and publisher of the work.

A. W.—Try the effect of bathing the feet with a lotion consisting of a saturated solution of boracic acid. Your general health also wants looking to. Take a little "Pepsine" with your food. If not

[Continued on page 143.]

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improved, write again. You, of course, will see rigidly that the feet are frequently washed, and that your stockings are duly changed. Your symptoms are an indication that your general health wants looking to.

ESPERANCE.—Try the effects (1) of cold sponging applied to the parts every morning; (2), of 10 drops of *Fer Bravais* taken thrice daily in a little water; (3), of careful attention to rest, and to the avoidance of over-exertion. Write again, if not improved. Avoid all stimulants. Injections hurtful.H. W. H.—1. No; often a sign of health, if general health is good. See advice to "Harry" in present number of *HEALTH*, and try the tonic recommended therein to "T. Fraser." 2. Albumen consists of carbon, hydrogen, nitrogen, and oxygen, with traces of sulphur and phosphorus.

REPENTANT.—See advice to "Harry," and also to "H. W. H." above.

C. F. J.—1. We think your mother should undergo an examination by a good physician. The symptoms are not those of liver disorder. 2. Try the pills recommended to "Thompson" in No. 33 *HEALTH*.RATTLE.—See and follow advice to "Harry" in present number of *HEALTH*. Take also the tonic recommended to "T. Fraser" in present number.

E. LEWIS.—Please send details of your health, habits, &c. Your letter affords us no information from which we can judge of your ailment.

HOPE.—Don't be nervous. Take the tonic you name for a week or two, and use the Macassar oil. Write again if not better. You drink too much tea. Try cocoa instead.

IMPLEMENT WORKS.—Try a little good claret taken along with your meals only. The tonic might be taken occasionally, but not regularly.

IVANHOE.—Try the effect of taking a little of Morson's "Pepsine" daily with your food. Live for a time on soups and beef essence (Brand's) alone, and give your stomach rest for a time. Let us hear from you after a trial of this advice.

DIM SIGHT.—A form of what is known as *herpes*: due to some error in diet or drink. Use a little Carbulated Vaseline as an application; attend to cleanliness, and thereafter, for a time, use plain Vaseline. Take a mild aperient (such as "Æsculap Water") occasionally in the mornings, and avoid all stimulants."

C. CLEVELAND.—1. Try the tonic recommended to "T. Fraser" in present No. of HEALTH for a week or so. 2. Read our article on "Chilblains" in No. 30 of HEALTH.

SENSITIVE PLANT.—Between 60° and 65° Fahr., we think, would be sufficient; heat to be increased, in case of cold or debility, to 68° or so. But the personal feelings should be closely studied. 2. Electrical belt is of no use in such a case—a genuine belt, we mean. Trust to flannel.

F. W. JOHNSON.—You have been needlessly alarmed. No need to fear. See advice to "Harry" in present No. of HEALTH. We cannot recommend the treatment you name.

AN UNCERTAIN ONE.—We know nothing of the belts, but if they are like the majority of the advertised ones, they will be shams in an electrical sense. If in doubt, send the belt, post paid, and with stamps for return, to Mr. Carpenter, 36, Craven Park, Harlesden, London, N.W., who will say whether or not it is genuine. For the pimples, try the sulphide of lime pills recommended to "Thompson" in No. 33 HEALTH.

TOM.—See advice to "Harry" above. You must not grow morbid. Attention to your general health will cure you. Take the tonic recommended to "T. Fraser" in present number of HEALTH, and let us hear how you are after a week or ten days' trial of this advice.

BUDA PESTH.—1. We have no exact knowledge of the "Dispensary"; but from its proceedings believe it to be a quack affair. Write demanding the name of its medical officers. If refused, you will then know it is a quack concern. If names are given, we can let you know if they are those of qualified medical men. No medical men of respectability advertise so. You need only put their

pamphlets in the fire if they annoy you (quacks always stick like horse-leeches). Let us hear how you succeed. 2. Prescription may do you you good. We should prefer to try "Pepsine" along with the food.

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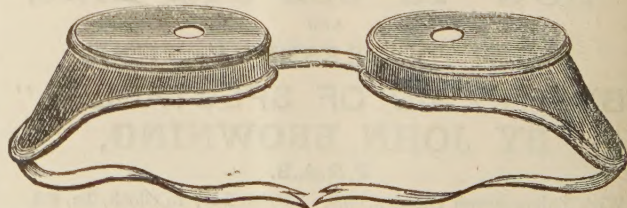
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